

## DECLARATION FOR PATENT APPLICATION

Docket No. (optional) M1160/20001

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

PARTIALLY ORDERED CAMS USED IN TERNARY HIERARCHICAL ADDRESS SEARCHING/SORTING

the specification of which is attached hereto unless the following box is checked:

☐ Was filed on \_\_\_\_\_ as United States Application Number or PCT International Application Number \_\_\_\_\_ and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56. I hereby claim foreign priority benefits under 35 U. S. C. §119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)  
NonePriority Claimed  
\_\_\_\_ Yes \_\_\_\_ No  
\_\_\_\_ Yes \_\_\_\_ No

_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below:

_____ Application Number	_____ (Filing Date)
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_____ Application Number	_____ (Filing Date)
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I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or §365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international date of this application.

_____ (Application Number)	_____ (Filing Date)	_____ (Status-patented, pending, abandoned)
_____ (Application Number)	_____ (Filing Date)	_____ (Status-patented, pending, abandoned)

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Alan H. Bernstein (Registration No. 19,315); Stanley H. Cohen (Registration No. 20,235); Manny D. Pokotilow (Registration No. 22,492); Barry A Stein (Registration No. 25,257); Martin L. Faigus (Registration No. 24,364); Eric S. Marzluf (Registration No. 27,454); Robert S. Silver (Registration No. 35,681); Scott M. Slomowitz (Registration No. 39,032); Michael J. Berkowitz (Registration No. 39,607); David M. Tener (Registration No. 37,054), and James J. Kozuch (Registration No. 39,733) care of Caesar, Rivise, Bernstein, Cohen &amp; Pokotilow, Ltd., 12th Floor, Seven Penn Center, 1635 Market Street, Philadelphia, Pennsylvania 19103-2212, my attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon

Full name of sole or first inventor (given name, family name) David FeldmeierInventor's signature *David Feldmeier*Date 6 October 1998Residence Morristown, NJCitizenship United StatesPost Office Address 46 East Lake Blvd., Morristown, New Jersey 07960Full name of second joint inventor, if any (given name, family name) Tyler ArnoldSecond Inventor's signature *Tyler Arnold*Date 6 October 1998Residence Long Valley, New JerseyCitizenship United StatesPost Office Address 5 East Mill Road, Long Valley, New Jersey 07853

Additional inventors are being named on separately numbered sheets attached hereto.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Provisional Application of:  
David C. Feldmeier, et al.

Application No.: 09/929,309

Group Art Unit: 2186

Filed: August 14, 2001

Examiner: Not Yet Assigned

For: PARTIALLY-ORDERED CAMS USED IN  
TERNARY HIERARCHICAL ADDRESS  
SEARCHING/SORTING

**POWER OF ATTORNEY BY ASSIGNEE AND  
CERTIFICATE BY ASSIGNEE UNDER 37 CFR § 3.73(B)**

Assistant Commissioner for Patents  
Washington, DC 20231

Dear Sir:

Micron Technology, Inc., Assignee of the entire right, title and interest in the above-identified application by virtue of Assignment (a copy of which is attached hereto), hereby appoints the attorneys and agents of the firm of Dickstein Shapiro Morin & Oshinsky LLP located at 2101 L Street NW, Washington, DC 20037-1526, listed as follows:

Gary M. Hoffman	26,411	John C. Luce	34,378	Ellen S. Tao	43,383
Thomas J. D'Amico	28,371	Peter McGee	35,947	Gary L. Veron	39,057
Donald A. Gregory	28,954	Edward A. Meilman	24,735	Steven I. Weisburd	27,409
James W. Brady, Jr.	32,115	Edwin Oh	45,319	Mialeeka C. Williams-Bibbs	48,037
Jon D. Grossman	32,699	William E. Powell, III	39,803	Jeremy A. Cubert	40,399
Mark J. Thronson	33,082	Steven Rubin	43,063	Gianni Minutoli	41,198
Eric Oliver	35,307	Michael J. Scheer	34,425	Michael Bergman	42,318
Laurence E. Fisher	37,131	Salvatore P. Tamburo	45,153	Peter Veytsman	45,920
Ryan H. Flax	48,141	Stephen A. Soffen	31,063	Christopher S. Chow	46,493
Richard LaCava	41,135	Christopher M. Tanner	41,518		

and also, listed as follows:

Charles B. Brantley, III	38,086	Kevin D. Martin	37,882	David J. Paul	34,692
Michael L. Lynch	30,871				

attorneys of Micron Technology, Inc. as its attorneys with full power of substitution to prosecute this application and to transact all business in the Patent and Trademark Office in connection therewith.

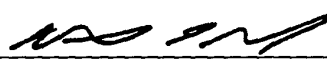
The Assignee certifies that the above-identified assignment has been reviewed and to the best of the Assignee's knowledge and belief, title is in the assignee.

Please direct all correspondence regarding this application to the following:

Thomas J. D'Amico  
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP  
2101 L Street NW  
Washington, DC 20037-1526  
Telephone: (202) 785-9700  
Fax: (202) 887-0689

Respectfully submitted,

MICRON TECHNOLOGY, INC.

  
\_\_\_\_\_  
Michael L. Lynch  
Chief Patent Counsel  
Registration No. 30,871

Dated: 8-7-02

## ASSIGNMENT OF INVENTION

WHEREAS, we, David C. Feldmeier and Tyler G. Arnold, residing at 46 East Lake Blvd., Morristown, New Jersey 07960 and 5 East Mill Road, Long Valley, New Jersey 07853, respectively, have made a certain new and useful invention in the PARTIALLY ORDERED CAMS USED IN TERNARY HIERARCHICAL ADDRESS SEARCHING/SORTING, and are about to apply for Letters Patent of the United States based thereon

WHEREAS, I, DAVID C. FELDMEIER, am an employee of MUSIC SEMICONDUCTORS, INC.; and,

WHEREAS, I, Tyler G. Arnold, am an employee of MUSIC SEMICONDUCTORS, INC.

WHEREAS, MUSIC SEMICONDUCTORS, INC., a corporation organized and existing under the laws of the State of Colorado, and having an office and place of business at 254 B Mountain Avenue, Hackettstown, New Jersey 07840, is desirous of acquiring the entire right, title and interest in and to the invention and all improvements thereon which may be made, conceived or acquired by David C. Feldmeier and Tyler G. Arnold, during the course of our association with MUSIC SEMICONDUCTORS, INC., and for one year thereafter, in and throughout the United States, its territories and all countries foreign thereto, and in and to said application for Letters Patent and in and to any and all Letters Patent of the United States and all countries foreign thereto which have been granted or may be granted on said invention or any part thereof, or any improvements thereon.

NOW, THEREFORE, IN CONSIDERATION of the sum of One Dollar (\$1.00), and other good and valuable consideration, the receipt of which is hereby acknowledged, we, David C. Feldmeier and Tyler G. Arnold, by these presents do sell, assign and transfer unto the said MUSIC SEMICONDUCTORS, INC., our entire right, title and interest in and throughout the United States, its territories and all countries foreign thereto in and to said invention and any improvements thereon which may be made, conceived or acquired by us during the course of our association with the said MUSIC SEMICONDUCTORS, INC., and for one year thereafter, in and to said application for Letters Patent and any and all Letters Patent and extensions thereof of the United States and countries foreign thereto which have been or may be granted on said invention or any part thereof, or any improvements thereon or on said application, or any divisional, continuing, renewal, reissue, or other application and all international priority rights associated therewith, based in whole or in part thereon, or based upon said invention, or any improvements thereon;

TO BE HELD AND ENJOYED by the said MUSIC SEMICONDUCTORS, INC. and its legal representatives and assigns to the full ends of the terms for which said Letters Patent, or any of them, have been granted or may be granted as fully and entirely as the same would have been held and enjoyed by us had no sale and assignment of said interest been made; and we do hereby authorize and request the Commissioner of Patents and Trademarks to issue any and all Letters Patent which may be granted upon the said invention above referred to, or any of them, or upon said invention or any part thereof, or upon any improvements thereon which may be made, conceived or acquired by us during the course of our association with the said company and for one year thereafter, to said

MUSIC SEMICONDUCTORS, INC., and we hereby agree for ourselves, our heirs, executors and administrators, to execute without further consideration, any further legal documents and any further assignments and any releases, reissues, renewals or other applications for Letters Patent that may be deemed necessary by the Assignee herein named, fully to secure to the said Assignee its interest as aforesaid in and to said invention or any part thereof or any improvements thereon, and in and to said several Letters Patent, or any of them.

We do hereby covenant for ourselves and our legal representatives, and agree with MUSIC SEMICONDUCTORS, INC., and its legal representatives, that we have granted no license to make or sell the said invention, that prior to the execution of this deed our right, title and interest in the said invention have not been encumbered, that we then had good right and title in and to the invention and that we have not executed and will not execute any instrument in conflict therewith.

IN WITNESS WHEREOF, I have hereunto affixed my hand and seal this

6<sup>th</sup> day of October 1998.

  
\_\_\_\_\_  
DAVID C. FELDMER

STATE OF NEW JERSEY

:  
: SS:

COUNTY OF

: Sussex

Before me personally appeared said David C. Feldmeier and acknowledged  
the foregoing instrument to be his free act and deed, this 6<sup>th</sup> day of October 1998.

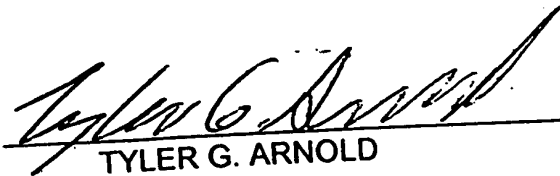
 (SEAL)  
\_\_\_\_\_  
Notary Public

My Commission Expires:

NICOLETTE SOUCY  
NOTARY PUBLIC OF NEW JERSEY  
Commission Expires 7/9/2002

IN WITNESS WHEREOF, I have hereunto affixed my hand and seal this

6<sup>th</sup> day of October 1998.

  
TYLER G. ARNOLD

STATE OF NEW JERSEY  
COUNTY OF

:  
: SS:  
: Sussex

Before me personally appeared said TYLER G. ARNOLD and acknowledged  
the foregoing instrument to be his free act and deed, this 6<sup>th</sup> day of October 1998.

 (SEAL)  
Notary Public

My Commission Expires:

NICOLETTE SOUCY  
NOTARY PUBLIC OF NEW JERSEY  
Commission Expires 7/9/2002



## ASSIGNMENT OF PATENTS

This ASSIGNMENT OF PATENTS (this "Assignment of Patents"), dated as of March 7, is entered into by and among (i) MUSIC Semiconductors, Inc., a Chapter 11 debtor in reorganization, together with all of its predecessors in interest (collectively referred to as "Music"), (ii) Music Corporation, a Philippine corporation, together with all of its predecessors in interest (collectively referred to as "MC"), (iii) Music Semiconductors Philippines, Inc., a Philippine corporation and a subsidiary of MC, together with all of its predecessors in interest (collectively referred to as "MSPI"), (iv) Musem Electronics NV, a Netherlands corporation, together with all predecessors in interest (collectively referred to as "Musem"), (v) Innovative Technology, a California limited liability company, together with all of its predecessors in interest (collectively referred to as "Innovative"), and (vi) Micron Technology, Inc., a Delaware corporation ("Purchaser"). Music, together with MC, MSPI, Musem and Innovative shall be referred to collectively as the "Sellers".

This Assignment of Patents is entered into pursuant to the Asset Purchase Agreement, dated as of March 7, 2002, by and among Purchaser and the Sellers (the "Asset Purchase Agreement"). Any capitalized term used herein but not otherwise defined herein shall have the meaning ascribed to such term in the Asset Purchase Agreement.

Pursuant to the Asset Purchase Agreement, each Seller agreed, among other things, to transfer to Purchaser all of the Sellers' right, title and interest in and to the Ternary Business, which includes any and all patents, patent applications and provisional applications (including all counterparts, divisions, continuations, continuation-in-parts, reexaminations or reissues thereof), as well as inventions not yet applied for, owned by each of the Sellers throughout the world and associated with, or related to, the Ternary Business, together with any and all rights of each Seller associated with all such inventions not yet applied for or inventions described or claimed in said applications and patents, whether or not such patents are issued by or such applications are pending with the USPTO or other comparable governmental authority of any foreign jurisdiction (including, without limitation, those patents, applications, and inventions set forth on Exhibit A hereto (the "Assigned Patents")), in exchange for the payment by Purchaser of the Purchase Price pursuant to the terms and subject to the conditions provided in the Asset Purchase Agreement.

1. Assignment of Patents by the Sellers. Each of the Sellers hereby irrevocably and fully grants, bargains, sells, transfers, conveys, assigns and delivers to Purchaser all right, title and interest in and to the Assigned Patents, free and clear of all encumbrances, together with causes of action and other rights to sue for and remedies against past, present and future infringements of any of the foregoing, together with the right to collect damages therefore, and rights of priority provided thereby, and all rights to seek protection of interests therein under the laws of any jurisdiction worldwide and all tangible embodiments thereof, to have and to hold the same unto Purchaser, its successors and assigns, for and during the existence of such rights and all renewals thereof.

2. Further Assurances. Each Seller hereby covenants and agrees that from time to time and at the expense of the Sellers, and without further consideration, upon request of Purchaser, each Seller shall and shall cause each of its affiliates to execute and deliver such instruments and documents, and take such further actions, as Purchaser reasonably may request to sell, convey, transfer and assign to Purchaser, or to record Purchaser's interest in or to, any of the Assigned Patents.

3. Power of Attorney. Each Seller hereby constitutes and appoints Purchaser as its lawful attorney in fact, with full power of substitution in each Seller's name and stead, to take any and all steps, including proceedings at law, in equity or otherwise, to execute, acknowledge and deliver any and all instruments and assurances necessary or expedient in order to protect or perfect the aforesaid rights and causes of action more effectively in Purchaser or to protect the same or to enforce any claim or right of any kind with respect thereto. Each Seller hereby declares that the foregoing power is coupled with an interest and as such is irrevocable.

4. Successors and Assigns. This Assignment of Patents shall be enforceable against the successors and assigns of the Sellers and shall inure to the benefit of the successors and assigns of Purchaser.

5. Governing Law. This Assignment of Patents shall be governed by and construed in accordance with the laws of the United States, in respect to patent issues and in all other respects, including as to validity, interpretation and effect, by the internal laws of the State of California, without giving effect to the conflict of laws rules thereof.

IN WITNESS WHEREOF, REOF, Music, MC, MSPI, Musem, Inc. have caused this Assignment of Patents to be signed by their respective officers thereunto duly authorized, all as of the date first written above.

MICRON TECHNOLOGY, INC.

By: [Signature]  
Name: Jay N. Hawkins  
Title: Vice President of Operations

MUSIC SEMICONDUCTORS, INC.

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

MUSIC CORPORATION

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

MUSIC SEMICONDUCTORS PHILLIPINES,  
INC.

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

MUSEM ELECTRONICS NV

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

[Signature page to Assignment of Patents continues on next page]

IN WITNESS WHEREOF, Music, MC, MSPI, Musem, Innovative and Purchaser have  
d this Assignment of Patents to be signed by their respective officers thereunto duly  
rized, all as of the date first written above.

MICRON TECHNOLOGY, INC.

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

MUSIC SEMICONDUCTORS, INC.

By: [Signature]  
Name: EDWARD M. MILLER  
Title: PRESIDENT & COO

MUSIC CORPORATION

By: [Signature]  
Name: MICHAEL BURTON  
Title: PARTNER & CEO

MUSIC SEMICONDUCTORS PHILIPPINES,  
INC.

By: [Signature]  
Name: MICHAEL BURTON  
Title: PARTNER & CEO

MUSEM ELECTRONICS NV

By: [Signature]  
Name: MICHAEL BURTON  
Title: STAFF DIRECTION & PARTNER

[Signature page to Assignment of Patents continues on next page]

[Signature]

INNOVATIVE TECHNOLOGY, LLC

By its sole managing member, Music  
Semiconductors, Inc.

By: [Signature]  
Name: EDWARD M. MURPHY  
Title: PRESIDENT & COO

[ASSIGNMENT OF PATENTS]

[Signature]

**EXHIBIT A**

Patent, Application, or Invention Title	Description/Comments	PB NTR #
<b>PATENTS ISSUED</b>	Patent No.	
Partially-Ordered CAMs Used In Ternary Hierarchical Address Searching/Sorting	6,289,414 ✓	
<b>PATENT APPLICATIONS</b>		
Partially-Ordered CAMs Used In Ternary Hierarchical Address Searching/Sorting	09/929,309	
A Simplified Switching Hub for Data Communication Networks	09/129,108	
Crossbar Switch and Control for Data Networks Switching	09/320,908	
Routing Arbiter for Data Network Switching	09/320,909	
Reduced Signal Swing in Bit Lines in a CAM	60/324,459	
A Tertiary CAM Cell	60/324,462	
Source Coupled Match Detector	60/324,361	
Reduced Signal Swing in Match Detection Circuit	60/324,365	
Writing to and Reading from a RAM or a CAM using Current Drivers and Current Sensing Logic	60/303,247	
A Novel Priority Encoder	60/303,222	
A Novel Multi-Match Detection Circuit	60/303,244	
Distributed Content Addressable Memory	60/303,226	
High Speed Ring/Bus	60/303,719	
Current Switching Sensor Detector	60/288,038	
<b>Inventions</b>		
A novel two-step method to perform multi-width lookup in CAM		
A conditional write instruction for CAM		
A technique to allow wide data lookup in CAM		
A multi-purpose CAM cascade circuit		
A simple power management technique for CAM		
A dynamic CAM cell implemented in standard logic		
Timestamp counters for learning and aging CAM entries		

Patent, Application, or Invention Title	Description/Comments	PB NTR #
Inventions (continued)		
Simultaneous refresh of multiple dynamic CAM words		
A read-modify-write technique to emulate masked write in dynamic CAM		
A CAM with a parallel instruction set		
CAM status bits that can be written for all matching words		
A dynamic CAM with a variable refresh rate		
Variable number of priority queues		
A wrap register for a priority queue		
A "both" instruction for a priority queue		
A CAM datapath to simplify data ordering		
Replication of input data for narrow width CAM lookup		
Conditional instruction execution on a CAM processor interface		
A unique identifier manager circuit		

ACKNOWLEDGMENT - MUSIC SEMICONDUCTORS, INC.

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TY OF SAN FRANCISCO )

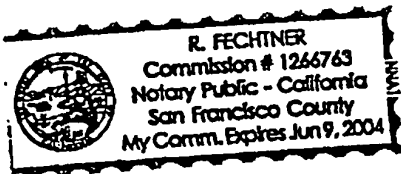
) SS:

Roxi Fechtner a Notary Public in and for said County, in the State aforesaid, DO  
BY CERTIFY that Edward Murphy Miller Jr. appeared before me this day in person,  
knowledge that he executed and delivered the Instrument of Assignment of Patents above as his free and  
ary act and in his representative capacity for Music Semiconductors, Inc., a Chapter 11 Debtor in Possession,  
uses and purposes herein set forth.

IN WITNESS WHEREOF, I have hereunto my hand and notarial seal this 6th day of March 2002.

R Fechtner  
Notary Public

My Commission Expires: 6-9-2004





ACKNOWLEDGMENT- MUSIC CORPORATION

E OF CALIFORNIA

)  
SS:  
)

ITY OF SAN FRANCISCO

I, Rox Fechtner, a Notary Public in and for said County, in the State aforesaid,  
DO HEREBY CERTIFY that Michael Burton, appeared before me this day in  
, and acknowledged that he executed and delivered the Instrument of Assignment of Patents above as his free  
voluntary act and in his representative capacity for Music Corporation, a Philippine corporation, for the uses and  
purposes herein set forth.

IN WITNESS WHEREOF, I have hereunto my hand and notarial seal this 6th day of March 2002.



R. Fechtner  
Notary Public

My Commission Expires: 6-9-2004

**ACKNOWLEDGMENT - MUSIC SEMICONDUCTORS PHILIPPINES, INC.**

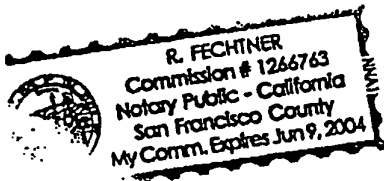
STATE OF CALIFORNIA

COUNTY OF SAN FRANCISCO

)  
SS:  
)

Roxi Fechtner a Notary Public in and for said County, in the State aforesaid, DO  
EBY CERTIFY that Michael Burton appeared before me this day in person,  
acknowledged that he executed and delivered the Instrument of Assignment of Patents above as his free and  
notary act and in his representative capacity for Music Semiconductors Philippines, Inc., a Philippine  
corporation, for the uses and purposes herein set forth.

IN WITNESS WHEREOF, I have hereunto my hand and notarial seal this 6th day of March 2002.



R. Fechtner  
Notary Public

My Commission Expires: 6-9-2004

ACKNOWLEDGMENT - INNOVATIVE TECHNOLOGY, LLC

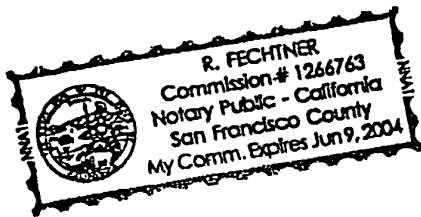
TE OF CALIFORNIA

NTY OF SAN FRANCISCO

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Roxi Fechtner, a Notary Public in and for said County, in the State aforesaid, DO  
EBY CERTIFY that Edward Murphy Miller Jr. appeared before me this day in person,  
acknowledged that he executed and delivered the Instrument of Assignment of Patents above as his free and  
ntary act and in his representative capacity for Innovative Technology, LLC, a California limited liability  
pany, for the uses and purposes herein set forth.

IN WITNESS WHEREOF, I have hereunto my hand and notarial seal this 6th day of March 2002.



R. Fechtner  
Notary Public

My Commission Expires: 6-9-2004

ACKNOWLEDGMENT - MUSEM ELECTRONICS NV

E OF CALIFORNIA

ITY OF SAN FRANCISCO

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) SS:  
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Roxi Fechter a Notary Public in and for said County, in the State aforesaid, DO  
BY CERTIFY that Michael Burton appeared before me this day in person,  
acknowledged that he executed and delivered the Instrument of Assignment of Patents above as his free and  
ary act and in his representative capacity for Musem Electronics NV, a Netherlands corporation, for the uses  
rposes herein set forth.

IN WITNESS WHEREOF, I have hereunto my hand and notarial seal this 6th day of March 2002.



R. Fechter  
Notary Public

My Commission Expires: 6-9-2004